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SEMICONDUCTOR DEVICE

L4: 1 of 1

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ABSTRACT:

PURPOSE: To reduce the on resistance with the same number of processes and the same high breakdown resistance by providing a second conductivity type of extended drain region between a second type of source region and a drain contact region, and providing a plurality of conductivity type regions, which pass through the surface and reach the interior of semiconductor substrate, apart in this extended drain region.

CONSTITUTION: Plural pieces of PT regions 3 are provided apart, and the depth of each PT region reaches the interior of a substrate 4 through an extended drain region 2. Therefore, the high-concentration area at the surface of the silicon substrate 4 of extended drain region 2 where a current flows also becomes the region where a current flows, so on resistance reduces. Hereupon, not to cause the reduction of breakdown strength, the intervals between plural pieces of PT regions 3 are such ones that the depletion layers are shut in the extended drain region at gate off, and the respective PT regions 3 are connected to the silicon substrate electrically. Hereby, on resistance reduces to about 70% as compared with a conventional one.